

ABSTRACT

Methods for forming shallow trench isolation structures are disclosed.

In a disclosed example, after a trench is formed in a substrate, an oxide layer is formed on sidewalls and a bottom of the trench. Then, a metal or poly-silicon layer is formed on the oxide layer. Next, a portion of the metal or poly-silicon layer is etched such that the oxide layer on the bottom of the trench is exposed, while leaving the metal or poly-silicon layer on the sidewalls of the trench. Finally, a dielectric material layer is deposited to fully fill the trench.